

TWO NEW TUBER-BEARING SOLANUM SPECIES FROM MEXICO:

S. TARNII AND S. MATEHUALAE

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During the joint US-Mexico-Canada-Denmark potato collecting expeditions to Mexico in 1982, 1983 and 1984, two hitherto unknown species were discovered, which are described below. We thank Dr. R Hanneman, Director of the Potato Introduction Station at Sturgeon Bay, Wisconsin and the Inter-Regional Potato Introduction Project (IR-1) for sponsoring the expeditions and the U.S.D.A. for providing the funding. We are also most grateful to the Mexican Instituto Nacional de Investigaciones Agricolas and the Mexican Potato Programme, through its Director Ing Manuel J. Villareal for support provided during the three expeditions. We offer our thanks also to Mr. D. Costa for kindly checking the latin concordances.

The members of the expeditions were T.R. Tarn (Canada), A. Rivera-Peña (Mexico), J.P. Hjerting (Denmark), R.W. Ross (U.S.A.) and J. Gómez (Mexico). Species TYPE citations indicate the collectors actually present when the specimens were gathered.

S. tarnii Hawkes & Hjerting, sp. nov.

Stem erect to spreading, from 60 - 100 cm tall, branched towards the base, (2.5-) 4 - 5 mm diam., green splashed with dark purple, slightly angled, provided with fairly frequent short appressed hairs, sparser below or sub-glabrous.

Leaf 8 - 12 (-15) cm long x 6 - 8 (-10) cm broad, 3 - 4 (-5) - jugate, with 0 - 3 (-7) pairs of small ovate interjected leaflets; lateral leaflets 3 - 4 (-5) cm long x 0.6 - 1.5 (-2) cm broad, lanceolate to narrowly lanceolate with obtuse to acute or acuminate apex, the base rounded; petiolules 2 - 5 (-8) mm long; terminal leaflet about the same size as the upper laterals; semi-lunate pseudostipular leaflets well-marked; upper leaf surface often dark green and glossy, occasionally medium green, covered with inconspicuous rather short appressed hairs; hairs on lower surface shorter, mostly confined to the veins.

Inflorescence rather few-flowered; peduncle 3 - 6 (-13) cm long, sometimes unforked, with dense short to medium-lengthed sub-appressed upward-pointing hairs; pedicels (10-) 15 - 20 (-30) mm long, articulated above the centre, with pubescence as for peduncle but sparser, though denser below calyx base.

Calyx large, 10 - 15 mm diam., very spreading, with (1-) 2 - 4 (-5) mm long reflexed acumens; whole calyx fairly densely covered with long thin appressed hairs.

Corolla white, stellate, showy, very reflexed, 25 - 35 mm diam; lobes 8 - 10 (-14) mm long x 5 (-9) mm broad at the base.

Anthers 5 - 8 mm long, not markedly narrower towards the apex; filaments 1 - 2 mm long.

Style (8-) 10 - 13 mm long, exerted for 2 - 3 mm above the anther column; stigma capitate, only slightly thicker than style apex.

Berries spherical to ovoid, about 15 - 20 mm diam, with dark green stripes and white spots.

Chromosome number: $2n = 24$

Caulis rectus ad extendentem, 60 - 100 cm altus, e basi ramosus, viridis atropurpureo maculatus, pilis brevibus appressis admodum frequentibus obtectus.

Folium 3 - 4 (-5) - jugatum, foliolis interjectis ovatis parvis 0 - 3 (-7) - jugis; foliola lateralia lanceolata ad anguste lanceolata, basaliter rotundata, petiolulis 2 - 5 (-8) mm longis; foliolum terminale lateralibus simile; foliola pseudostipulata semilunata bene notata; superficies supra folium atrovirens, lucens, pilis appressis inconspicuis admodum brevibus.

Inflorescentia admodum pauciflora; pedunculus brevis, nonnunquam infurcatus, pilis densis subappressis sursum versis; pedicelli (10-) 15 - 20 (-30) mm longi, articulati supra medium, pubescentia ut in pedunculo sed sparsior, densior tamen sub calycis basi.

Calyx 10 - 15 mm diametro, acuminibus (1-) 2 - 4 (-5) mm longis; calyx totus satis tectus pilis longis angustis appressis.

Corolla alba, stellata, 25 - 35 mm diametro.

Antherae 5 - 8 mm longae , non valde angustiores ad apicem.

Stylus (8-) 10 - 13 mm longus, 2 - 3 mm exsertus supra columnam antherarum; stigma capitatum, quam apex styli solum leviter crassior.

Baccae sphaericae ad ovoideas, ca 15 - 20 mm diametro, striis atroviridibus et maculis albis.

TYPE: MEXICO, Hidalgo State, highway 85 from Zimapán to Tamazunchale at Las Trancas, about 6 km east along track towards Nicolás Flores. Alt. 2420 m. 6 Sept. 1983. Among small woody shrubs and perennial herbs. Tarn, Ross and Gómez 62 (K - HOLOTYPE).

Note: The above description was compiled from collecting numbers 36, 62, 64, 78, 79, 88, 98, 101, 103, 255, 256 and 257 from the same expeditions, grown at Sturgeon Bay, Wisconsin and Copenhagen, Denmark. The species was first seen by A. Rivera-Peña (No. 36). Occurs in the mountainous regions of Hidalgo, Querétaro and Vera Cruz States at an altitude range of 2360 - 2650 m in open habitats with well-drained soil.

The striking features of S. tarnii are the delicate leaves with generally narrow lanceolate leaflets, large white stellate flowers, large anthers, style not very exerted from the anther column and stigma slightly thicker than the style apex. It belongs to series Pinnatisecta, but differs from S. pinnatisectum Dun. in the possession of well-marked pseudostipular leaflets and less well-dissected leaves, and from S. trifidum Corr, in the pubescence and berry shape, as well as its adaptation to open places, whilst S. trifidum seems to favour shaded habitats in pine forests.

S. matehualae Hjerting & Tarn, sp. nov.

Stem erect to spreading, 40 cm tall or more, branched, 4 - 5 mm diam, cylindrical or slightly angled, bearing sparse short hairs below, more frequent above.

Leaf to 19 cm long x 11 cm broad, 2 - 3 (-4) - jugate; lateral leaflets 4 - 5 cm long x 2 - 3 cm broad, broad ovate to broad ovate-oblong, with cordate base and obtuse apex; interjected leaflets usually absent but occasionally up to 2 pairs per leaf; terminal leaflet generally almost the same size as the laterals but occasionally longer and broader, with truncate to cordate base and obtuse apex; petiolules of lateral leaflets 3 - 5 (-8) mm long; leaves dark green and glabrous above or with a few short hairs on the central vein;

paler below, with short hairs on the veins; pseudostipular leaflets semilunar, well-marked.

Inflorescence rather few-flowered; peduncle rather short, 2 - 4 (-6) cm long, usually forked above, provided with moderately frequent very short appressed hairs; pedicels (10-) 15 - 20 mm long, articulated slightly above the centre; pubescence as for peduncle.

Calyx campanulate, dark purple, very small, 3 - 4 mm long and 3 - 4 mm diam, with parallel-sided 1 - 2 mm long acumens; pubescence very sparse, almost absent on the lobes and acumens.

Corolla dark purple below, paler above, rotate-pentagonal, 20 (-25) mm diam, with well-marked lobes and 2 mm long acumens.

Anthers 4 - 5 mm long; filaments 0.5 to 1 mm long.

Style 12 - 13 mm long, curved above, exerted up to 8 mm above the stamen column; stigma short, conical, about the same thickness as the style apex.

Berries spherical, about 1 - 1.5 cm diam., dark green with slightly darker stripes.

Chromosome number: $2n = 48$.

Caulis rectus ad extendentem, 40 cm altus vel altior, ramosus, pilis sparsis ad frequentes tectus.

Folium 2 - 3 (-4) - jugatum, foliola interjecta plerumque absentia, interdum ad 2 juga per folium; foliola lateralia late ovata ad late ovato-oblonga basaliter cordata et apicale obtusa; foliolum terminale lateralibus simile, sed interdum longius et latius; petioluli 3 - 5 (-8) mm longi; foliola pseudostipulata semilunata, bene notata; folia atrovirentia et fere vel omnino glabra supra, palidiora infra.

Inflorescentia admodem pauciflora; pedunculus 2 - 4 (-6) cm longus, pilis aliquantum frequentibus, brevissimis appressis instructus; pedicelli (10-) 15 - 20 mm longi, leviter supra medium articulati; pubescentia ut in pedunculo.

Calyx atropurpureus minutissimus, 3 - 4 mm longus et diametro acuminibus 1 - 2 mm longis; pubescentia sparsissima.

Corolla infra atropurpurea, supra pallidiora, rotata ad quinquangularem, 20 (-25) mm diametro; lobis bene notatis et acuminibus 2 mm longis.

Antherae 4 - 5 mm longae.

Stylus 12 - 13 mm longus, supra arcuatus, usque ad 8 mm exsertus supra columnam antherarum; stigma breve conicum circa tam crassum quam apex styli.

Baccae sphaericae, 1 - 1.5 cm diametro, atrovirentes cum striis modice perviridioribus.

TYPE: MEXICO, San Luis Potosi State, Sierra de Catorce, road turning off 10 km west of Cedral (north of Matehuala), track to Real de Catorce, 2 km above tunnel. Alt. 2740 m. 13 Oct. 1983. Border of maize field, on path, among stones. Hjerting, Ross and Gómez 155 (K - Holotype).

This species is distinguished by the dark green almost glabrous leaves, broad ovate to broad ovate-oblong leaflets, small anthers, very long curved style, exserted up to 8 mm above the stamen column, and small stigma. It belongs to Series Longipedicellata and is probably most closely related to S. hjertingii.